ASSIGNMENT 2

Textbook Assignment: "Planning Plumbing Projects" and "Fire Protection Systems." Pages 7-20 through 8-27.

2-1. Direct chemical attack over the surface of a metal is known by what term?

1. Galvanic action
2. Uniform corrosion
3. Dezincification
4. Embrittlement

2-2. A difference of potential between areas on a metallic surface in contact with an electrolyte causes what condition?

1. Compositional corrosion
2. Direct chemical attack
3. Local galvanic action
4. Uniform corrosion

2-3. Corrosion of underground pipelines, resulting from unlike soils and subsurface stray currents, is characterized by what type of deterioration?

1. Localized
2. Uniform
3. Nonelectrolytic
4. Synthetic

2-4. In underground pipelines, the mill scale embedded in the wall of iron pipe causes what type of corrosion?

1. Uniform
2. Localized
3. Compositional
4. Biological

2-5. Which of the following types of pipe is most susceptible to microbiological corrosive action?

1. Monel
2. Plastic
3. Steel
4. Asbestos

2-6. Dezincification, graphitization, and hydrogen embrittlement are what specific type of corrosion?

1. Localized
2. Compositional
3. Uniform
4. Biological

2-7. Sections of buried pipelines under stress are subject to localized electrolytic corrosion when adjoining unstressed sections become

1. cathodic
2. localized
3. anodic
4. sacrificial

2-8. Nonelectrolytic gases and vapors cause corrosion only when subjected to what condition?

1. Low temperatures
2. Negative potentials
3. High temperatures
4. Positive potentials

2-9. Internal deterioration is most likely to occur in metal piping and storage facilities containing impure nonelectrolytic fluids.

1. True
2. False

2-10. Rainwater is generally considered an electrolyte because it contains

1. dissolved atmospheric gases
2. suspended solids
3. minerals in solution
4. measurable resistivity

2-11. Which of the following corrosive reactions is often the result of an agent, such as salt, being present in the environment?

1. Hydrogen embrittlement
2. Localized galvanic action
3. Stray current electrolysis
4. Direct chemical attack

2-12. When you find it necessary to join copper and galvanized piping, the fitting should be equipped with which of the following materials?

1. An anode
2. A fiber-glass wrap
3. A dielectric bushing
4. A standard cross-connection

2-13. Which of the following coatings is best suited for use as a corrosion inhibitor on exposed steel pipelines suspended along piers?

1. Coal tar
2. Grease
3. Concrete
4. Asphalt

2-14. In the galvanic anode method of cathodic protection for steel structures, the structure is established as the cathode in a dissimilar metal galvanic cell by the use of what electrically connected component?

1. Copper anode
2. Sacrificial anode
3. Magnesium cathode
4. Controlled resistor

2-15. The impressed current method of cathodic protection is different from the galvanic anode method in which of the following ways?

1. An electrical source is not required
2. A direct current is applied from anode to cathode
3. An anode is unnecessary
4. A cathode may be used for the anode

TEST EQUIPMENT

A. Holiday Leak Detector

B. Resistivity Meter

C. Volt-Millivolt Meter

D. Ohmmeter

Figure 2A

IN ANSWERING QUESTIONS 2-16 THROUGH 2-20, REFER TO FIGURE 2A.

2-16. Locate imperfections in pipe coatings:

1. A
2. B
3. C
4. D

2-17. Measure the structure-to-soil potential of a given cathodic protection system:

1. D
2. C
3. B
4. A

2-18. Locate an area suitable for an anode bed:

1. A
2. B
3. C
4. D

2-19. Measure the corrosive susceptibility of a given soil:

1. D
2. C
3. B
4. A

2-20. Determine the variation in potential of galvanic anodes:

1. A
2. B
3. C
4. D

2-21. All automatic sprinkler systems have which of the following characteristics in common?

1. Water supply
2. Piping network
3. Sprinklers
4. Each of the above

2-22. What type of automatic sprinkler system is most commonly used?

1. Wet pipe
2. Semidry pipe
3. Low-differential dry pipe
4. Latched-clapper dry pipe

2-23. In a dry-pipe system, the pipes can contain air or what other element under pressure?

1. Argon
2. Nitrogen
3. Hydrogen
4. Xenon

2-24. In a differential dry-pipe valve system, the air must be maintained at least how many psi greater than the trip pressure?

1. 5
2. 10
3. 15
4. 20

2-25. When debris in the water is a problem, you should use what type of dry-pipe valve?

1. Low differential
2. High differential
3. Mechanical
4. Latched clapper

2-26. What type of automatic sprinkler system should you use in an aircraft hangar?

1. Wet pipe
2. Semidry pipe
3. Water-deluge
4. Semiwet pipe

2-27. Preprime plugs blow out of the sprinklers at approximately what water pressure?

1. 10 psi
2. 15 psi
3. 20 psi
4. 25 psi

2-28. Automatic sprinklers have orifices graduated in what size increments?

1. 1/16 inch
2. 1/8 inch
3. 1/4 inch
4. 1/2 inch

2-29. A fusible-link sprinkler is kept closed by a two-piece link fused together by what type of metal?

1. Copper
2. Aluminum
3. Solder
4. Steel

2-30. A dry-pendent sprinkler is used when the system is exposed to which of the following conditions?

1. High ambient temperatures
2. Freezing temperatures
3. Explosive elements
4. Unstable chemicals

2-31. A dry-pipe alarm system has which of the following characteristics?

1. It is slow acting
2. It is moderate acting only
3. It is fast acting only
4. It is moderate or fast acting

2-32. The retard switch connected to the alarm port of a wet sprinkler system alarm-check valve is normally set within what pressure range?

1. 10 to 20 psi
2. 8 to 15 psi
3. 6 to 15 psi
4. 4 t0 15 psi

2-33. A pressure pump/pressure drop type of water-flow detector is usually adjusted to maintain what system pressure above normal supply pressure?

1. 20 to 40 psi
2. 25 to 50 psi
3. 30 to 60 psi
4. 35 to 70 psi

2-34. In an electronic pressure-drop detector, an overpressure condition of what magnitude can cause a trouble signal?

1. 100 psi
2. 150 psi
3. 200 psi
4. 250 psi

2-35. To prevent freezing of water in a fire protection system, a Utilitiesman normally installs a supervisory device in a pipe or reservoir with what low water-temperature setting?

1. 0° F
2. 25° F
3. 32° F
4. 40° F

INSPECTION AND TEST PERIODS
A. Weekly
B. Monthly
C. Quarterly
D. Annually
E. Every 3 years

Figure 2B

IN ANSWERING QUESTIONS 2-36 THROUGH 2-43, REFER TO FIGURE 2B.

2-36. General condition of sprinkler heads and sprinkler systems:

1. B
2. C
3. D
4. E

2-37. Water-flow alarms:

1. A
2. B
3. C
4. D

2-38. Air and water pressure in dry-pipe systems:

1. D
2. C
3. B
4. A

2-39. High-speed suppression systems:

1. B
2. C
3. D
4. E

2-40. General condition of standpipe systems:

1. D
2. C
3. B
4. A

2-41. General condition of hydrants:

1. B
2. C
3. D
4. E

2-42. Water level in tanks:

1. A
2. B
3. C
4. D

2-43. Valves (to see if they are in the open position):

1. D
2. C
3. B
4. A

2-44. What minimum distance must be maintained beneath a sprinkler for proper water distribution?

1. 48 inches
2. 36 inches
3. 24 inches
4. 18 inches

2-45. What type of test should be performed quarterly to test the alarm-check valves?

1. 6-inch drain test
2. 2-inch drain test
3. 8-inch drain test
4. 4-inch drain test

2-46. In a dry-pipe sprinkler system, the entire system should be checked for tightness when air pressure losses exceed what value?

1. 5 psi
2. 10 psi
3. 15 psi
4. 20 psi

2-47. When testing a water-clapper valve designed to trip at a fixed pressure of 10 to 15 psi, you should maintain what minimum air pressure on this valve?

1. 15 psi
2. 30 psi
3. 45 psi
4. 60 psi

2-48. When performing a basic inspection of accelerators and exhausters, you should check what pressure?

1. Water
2. Air
3. Centrifugal
4. Atmospheric

2-49. When testing a dry-pipe valve, you should perform what action first?

1. Close the main control valve
2. Open the main control valve
3. Open the inspector test connection
4. Close the inspector test connection

2-50. Once the dry-pipe system has been tested and the dry-pipe valve reset, you should check the air pressure within what approximate time period?

1. 12 to 24 hours
2. 2 to 4 hours
3. 24 to 48 hours
4. 4 to 8 hours

2-51. When testing deluge and preaction valves, you should perform the 2-inch drain test at what time interval?

1. Weekly
2. Monthly
3. Quarterly
4. Annually

2-52. When performing a deluge valve dry trip-test in a flammable area, you should use what test in place of the electric test set?

1. Infrared light
2. Hot water only
3. Hot cloth only
4. Hot water or hot cloth

2-53. When performing the cathodic protection test with an ammeter, you notice a diminishing current flow. This is an indication of what type of problem?

1. Failing electrodes
2. Blown fuses
3. Frozen electrodes
4. Broken ground wires

2-54. Under normal circumstances, full operational testing of high-speed suppression systems should be conducted at intervals not to exceed how many years?

1. 1
2. 5
3. 3
4. 7

2-55. Gaseous extinguishing systems are normally located in which of the following areas?

1. Computer operation centers
2. Radio receiver buildings
3. Power generating facilities
4. Each of the above

2-56. A local application system would normally be found in which of the following locations?

1. Paint dip tank
2. Restaurant range hood
3. Special motor
4. Each of the above

2-57. What type of system, if any, should you install in a transformer vault that contains oil-filled equipment?

1. Local application
2. Total flooding
3. Hose line
4. None

2-58. What characteristic of carbon dioxide makes it desirable for use on electrical fires?

1. High-pressure application
2. Electrical conductivity
3. Electrical nonconductivity
4. Low-pressure application

2-59. What is the normal cylinder pressure in a high-pressure system?

1. 600 psi
2. 500 psi
3. 400 psi
4. 300 psi

2-60. Storage area ambient temperatures for carbon dioxide cylinders should be within what temperature range?

1. 0°F to 100°F
2. 32°F to 130°F
3. 40°F to 150°F
4. 50° F to 100°F

2-61. In a low-pressure system, the frangible disk is designed to burst at what pressure?

1. 200 psi
2. 400 psi
3. 600 psi
4. 800 psi

2-62. In a low-pressure system, liquid carbon dioxide should always be maintained at what constant (a) pressure and (b) temperature?

1. (a) 200 psi (b) 0°F
2. (a) 300 psi (b) 32°F
3. (a) 200 psi {b) 32°F
4. (a) 300 psi (b) 0°F

2-63. High-pressure systems require approximately how many pounds of equipment for every pound of carbon dioxide stored?

1. 1
2. 5
3. 3
4. 7

2-64. Pipe and fittings in a high-pressure system have what minimum bursting pressure?

1. 2,000 psi
2. 3,000 psi
3. 5,000 psi
4. 7,000 psi

2-65. Pipe and fittings in a low-pressure system have a minimum bursting pressure of how many psi?

1. 1,800
2. 2,000
3. 2,800
4. 3,000

2-66. Pressure-relief devices operate at what pressure on a low-pressure system?

1. 400 psi
2. 450 psi
3. 500 psi
4. 550 psi

2-67. What automatic device should be installed along with a total flooding system to conserve carbon dioxide?

1. Closing
2. Venting
3. Door closure
4. Electrical lockout